

Social media and entrepreneurship: exploring the impact of social media use of start-ups on their entrepreneurial orientation and opportunities

Social media and entrepreneurship

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Abstract

Purpose – The aim of this paper is to investigate how social media use (SMU) affects the entrepreneurial orientation (EO) and entrepreneurial opportunities (EOP) of start-ups.

Design/methodology/approach – The hypothesis testing and analysis were conducted using the partial least squares approach to structural equation modeling (PLS-SEM).

Findings – The research shows that SMU has a strong positive impact on EOP, while it has no impact on start-ups' EO. Interestingly, the impact of SMU on EOP is stronger than the impact of EO on EOP.

Originality/value – The findings add new knowledge to the emerging research stream that focuses on SMU in the context of entrepreneurship and provides useful insights for both scholars and practitioners. In particular, the evidence suggests implications for stakeholders with regard to their firms' entrepreneurial activities. This research offers several possible avenues for future research.

Keywords Social media, Entrepreneurial orientation, Entrepreneurial opportunities, Start-ups

Paper type Research paper

1. Introduction

In the past decade, the use of social media (SM) has experienced significant growth in many countries (Chokpitakul and Anantachart, 2020), and its diffusion is presenting new opportunities for entrepreneurs in many sectors (Kaplan and Haenlein, 2010; Song *et al.*, 2019). Several SM platforms, such as Facebook, LinkedIn, Twitter, Instagram and YouTube, have been gaining popularity throughout the world and are affecting the behaviors and processes of both entrepreneurs and organizations (Fischer and Reuber, 2011; Parveen *et al.*, 2016).

The SM phenomenon (Kietzmann *et al.*, 2011) has influenced several industries, and it is a trend that cannot be ignored by both entrepreneurs and the main stakeholders involved in the entrepreneurial ecosystem. SM is changing entrepreneurship; in fact, it is changing the traditional patterns of entrepreneurial activities (Yu *et al.*, 2013) and revealing new frontiers for entrepreneurs.

The entrepreneurial landscape has been changing rapidly, and new SM favors the creation and development of a new digital-based entrepreneurship [1] (Nambisan, 2017;



Le Dinh *et al.*, 2018; Sahut *et al.*, 2019). The so-called digital entrepreneurship (DE) is “the reconciliation of traditional entrepreneurship with the new way of creating and doing business in the digital era” (Le Dinh *et al.*, 2018, p. 1). SM is a type of new digital technology and according to Nambisan (2017, p. 1029), the infusion of new digital technologies – including SM – “has transformed the nature of uncertainty inherent in entrepreneurial processes and outcomes as well as the ways of dealing with such uncertainty”. The scholar underlines that these technologies have unique characteristics in shaping entrepreneurial pursuits and that they play a key role in improving entrepreneurial processes and their outcomes and – at the same time – by involving a broader set of actors. SM is leading to collective ways of pursuing entrepreneurship (Fischer and Reuber, 2011; Aldrich, 2014), reducing the traditional barriers existing between invention and new venture creation (Steininger, 2019) and favoring the emergence of self-employment or growth-oriented entrepreneurial undertakings (Sahut *et al.*, 2019). Therefore, these new digital technologies could be enablers of entrepreneurial opportunities (EOP) and trigger a new venture creation process. In this vein, Sahut *et al.* (2019) highlighted the growing importance of studies on business opportunities generated by digital technologies and on the creation of new businesses taking place in the digital industry.

According to the relational view (Dyer and Singh, 1998; Dyer *et al.*, 2018), one of the research streams in the resource based theory (Penrose, 1959; Barney, 1991), entrepreneurs and organizations may leverage external relationships to obtain access to other actors’ resources to use in their processes (Hamel and Prahalad, 1994; Ireland *et al.*, 2002). Using these resources may help organizations to get access to a heterogeneous resource system (Amit and Schoemaker, 1993; Peteraf, 1993) and, in particular, to the knowledge these external actors have (Dyer and Singh, 1998; Gulati, 2007; Dyer *et al.*, 2018) that may be combined with the internal one using specific relational capabilities (Hamel and Prahalad, 1994; Dyer and Hatch, 2006; Gulati, 2007).

SM helps entrepreneurs and organizations promote openness (Macnamara and Zerfass, 2012; Kane, 2017). These platforms can help enhance organizational processes for idea capture and management, and they may help in making innovation processes faster and more effective (Archer-Brown and Kietzmann, 2018). In particular, according to some scholars (Kane, 2017; Nisar *et al.*, 2019), these platforms create several benefits, linked to knowledge management and learning processes, that are able to positively influence organizational performance.

The connectivity and openness of SM allow entrepreneurs to overcome initial difficulties and inabilities in the early stages of entrepreneurship (Kuhn *et al.*, 2016). Furthermore, SM has significant consequences on entrepreneurship because it offers a unique opportunity for entrepreneurs to enlarge their exposure to information (Schjoedt *et al.*, 2020).

SM may be particularly useful for entrepreneurial organizations (Bauman and Lucy, 2020, p. 15) because “there is more to social media than just online communication” and entrepreneurs can be exposed to several EOP.

Many entrepreneurs have adopted SM and are leveraging it to obtain benefits for their businesses (Fischer and Reuber, 2011; Kietzmann *et al.*, 2011; Mumi *et al.*, 2019). Among these benefits, SM allows entrepreneurs to establish relationships and partnerships (Quinton and Wilson, 2016; Rathore *et al.*, 2016), increase their communication with several stakeholders (Parveen *et al.*, 2016) and improve the performance of their businesses (Alarcón-del-Amo *et al.*, 2018). According to several scholars (Sigala and Chalkiti, 2015), when SM is used in the right way, it creates emotional bonds between the actors involved and help in increases organizational creativity. On the same page, Fischer and Reuber (2011) found that SM has a high potential to influence the formation of EOP.

Another significant characteristic of SM is its potential to give entrepreneurs access to larger networks to increase interactions and information exchange, both of which are useful

for identifying new EOP. At the same time, social media use (SMU) has two significant benefits for companies: improved efficiency and benefitting from a general cost reduction (such as cost related to marketing, interactions, transactions, customer service and information seeking) (Parveen *et al.*, 2016).

As pointed out by Davidsson (2015), the literature on EOP has experienced rapid growth since the study of Shane and Venkataraman (2000), thus triggering a redirection of entrepreneurship research. A growing number of researchers are trying to understand why some entrepreneurs succeed in creating or discovering EOP whereas others do not succeed. They also consider how these opportunities are evaluated and exploited. In this regard, new EOP could derive from SMU, and scholars aim to shed light on this topic.

Several definitions of EOP exist, and several constructs have been used to frame EOP (Davidsson, 2015). We focused on four types of EOP, namely opportunity discovery (OD), opportunity creation (OC), opportunity recognition (OR) and resource mobilization (RM) (Stuart and Sorenson, 2005; Park *et al.*, 2017; Olanrewaju *et al.*, 2018). These are key parameters that can be significantly influenced by SM. Fischer and Reuber (2011) focused on how SM triggers entrepreneurial thinking and action. In this sense, SMU influences the formation of EOP (Fischer and Reuber, 2011). Recent studies show that entrepreneurs may benefit from SMU as affecting the level of OR and enhancing RM, as well as facilitating the processes of OC and OD (Fischer and Reuber, 2011; Nambisan, 2017; Mumi, 2020).

Today, it is important to explore the effect of SMU on different EOP because our current knowledge on this topic is still characterized by few studies and focused on a limited number of EOP.

In addition to EOP, there is growing attention on the role of SMU in influencing the entrepreneurial orientation (EO) of companies (Parveen *et al.*, 2016). EO is a well-known entrepreneurial behavior of firms (Covin and Slevin, 1991), and it refers to a set of processes, practices and decision-making activities (Lumpkin and Dess, 1996). Companies' EO could be influenced by SM given their increasing use of this new digital technology. Start-ups are new ventures with a propensity for innovation and are characterized by initial uncertainty and risks. SMU can play a key role in improving the three well-known EO dimensions, namely proactiveness (PRO), risk-taking propensity (RSK) and innovativeness (INN) of the start-ups.

Garud and Giuliani (2013, p. 159) argued that "entrepreneurial journeys are dynamic processes requiring continual adjustments by actors". Similarly, Bendickson (2021, p. 540) pointed out that "entrepreneurship is dynamic, and the need to update, revise, validate, and expand this work is continuous and necessary". Because entrepreneurs operate in dynamic environments and SM is a new digital technology with high relevance in the current digital age, it is crucial for entrepreneurs, as well as the stakeholders involved in the entrepreneurial ecosystem, to understand the factors that can have significant effects on EOP and help improve elements of EO.

Despite the potential enabling effect of SMU for EOP and EO, entrepreneurship research has not fully explored its specific impacts on EOP and EO, which are the two research gaps that our paper addresses. In this field of research, there is a dearth of research that examines how EOP and EO can be facilitated by SMU. This paucity of studies is most evident in the case of start-ups. Prior research paid little focus on these new ventures and primarily considered single EOP (Fischer and Reuber, 2011; Mumi, 2020; Parveen *et al.*, 2016).

This is especially true in the Italian context, even though there are a number of studies with regard to new start-ups. Hence, to fill the research gap on the role of SMU in EOP identification activities, this study aims to answer the following research questions: Does SMU impact EOP? What types of EOP are affected by SMU? Does SMU affect the EO of start-ups?

The present research aims to address these gaps and contribute to a better understanding of the role of SM for entrepreneurship. SMU can open new pathways for EOP and orientation. It may represent a new frontier for entrepreneurs to increase their capability to connect with different stakeholders, to lower the barriers of start-ups' EOP and influence the EO of their

ventures. We developed and tested a framework to provide a full investigation of the effects of SMU, including its influence on both EO and on different types of EOP, such as OD, OC, OR and RM (Stuart and Sorenson, 2005; Park *et al.*, 2017; Olanrewaju *et al.*, 2018). We believe that SMU can positively affect the EO of start-ups by improving the three well-known dimensions of PRO, RSK and INN (Covin and Slevin, 1989; Parveen *et al.*, 2016; Sahaym *et al.*, 2019) as well as the EOP, and that EO can affect EOP. Therefore, we explore how SMU can influence both the EOP and the EO of start-ups. Hence, this study attempts to shed light on the importance of SMU, thus adding new to this newly emerging research field.

The empirical results from survey data collected from 296 Italian start-ups highlight the positive effect of SMU on the four aspects of EOP, whereas SMU has a marginal relationship with EO, suggesting that EO has a positive relationship with EOP. Our findings contribute to the entrepreneurship and information systems literature by examining the role of SMU on entrepreneurship and providing practitioners with important insights that highlight the importance of SMU in identifying EOP.

The study has been organized as follows: a review of the relevant literature, the development of research hypotheses, the research design and results of the study and the discussion and conclusions of the research.

2. Literature review

The literature on the relationship between SM and entrepreneurship is in its early stages and has only recently started gaining attention in academia (Schjoedt *et al.*, 2020). Olanrewaju *et al.* (2020, p. 90) have argued that “studies on social media and entrepreneurship are relatively new and fragmented in their focus, however there is increasing interest from academia and practitioners for further research and investigation within this area”. This highlights the importance of entrepreneurs exploring the impact of SM. In particular, the uses and implications of SM for entrepreneurs became a hot topic starting in the mid-2010s (Olanrewaju *et al.*, 2020; Schjoedt *et al.*, 2020). Increasing studies concern the relationship between SM and entrepreneurship, focusing on the antecedents of SMU by entrepreneurs; the use of SM for marketing, information searching and funding purposes; and firm-level outcomes of entrepreneurs’ use of SM, such as performance, process improvement, funding and innovation outcomes (Olanrewaju *et al.*, 2020; Schjoedt *et al.*, 2020). For instance, some scholars focus on the different motivations that entrepreneurs have for SMU (e.g. advertising and communicating with customers, building relationship with customers, branding) (Parveen *et al.*, 2016; Park *et al.*, 2017), how SM influences certain types of EOP (Olanrewaju *et al.*, 2018; Schjoedt, 2018) and the perceived contributions of SM to entrepreneurial characteristics, behaviors, cognitive factors and EO (Dutot and Bergeron, 2016; Parveen *et al.*, 2016; Park *et al.*, 2017; Sahaym *et al.*, 2019).

Contextualizing SM in entrepreneurship is difficult, because there are various elements to consider, some of which may be contradictory. Therefore, there is an ongoing debate concerning the role of SM in the discovery and exploitation of EOP, as well as a continuous call for more research that contributes to delineating the connections between different aspects of entrepreneurship and SM. Consequently, very little is known about the role of SMU in EOP and entrepreneurial behaviors, and there is a paucity of studies that focus specifically on the effects of SMU on EOP (Autio *et al.*, 2013) and the EO of firms (Covin and Slevin, 1989).

In this section, we will proceed to present a summary of the research on SMU, followed by the studies linking SMU to EOP.

2.1 Social media use

Many firms are leveraging SM to improve and benefit their businesses (Fischer and Reuber, 2011; Kietzmann *et al.*, 2011). For example, it is reported that as of 2019, over 50% of EU

companies have used at least one type of SM and over 80% of those EU companies use SM for marketing their products and services and image management (Eurostat, 2020). As of 2021, over 90% of US companies with more than 100 employees use SM for their marketing, sales and customer service activities (Statista, 2021), and about 77% of US small businesses do so (Dougert, 2018). As such, a growing number of studies are attempting to shed light on the effects SMU may have on businesses. Although the purpose and scope of this study is not to comprehensively review the literature on this topic, we have summarized the benefits of SMU in firms according to three aspects: (1) strategic marketing and customer relations management, (2) business performance and (3) financial performance and investor relations.

A high number of studies have focused on the key role of SM as a strategic marketing tool. In this regard, several studies have provided useful insights on the effects of SM on brand communications (Smith *et al.*, 2012) and their relational importance for companies (Laroche *et al.*, 2013). Prior studies have shown that SM is a significant factor in improving companies' images and awareness (Singh and Sonnenburg, 2012; Jones *et al.*, 2015; Olanrewaju *et al.*, 2020), marketing communication effectiveness (Kozinets *et al.*, 2010; Virtanen *et al.*, 2017), brand performances and revenue generation (Singh and Sonnenburg, 2012). In fact, a number of studies have highlighted that SM is a strategic marketing tool that contributes to enhancing a firm's capability to establish social customer relationships (Trainor *et al.*, 2014) and build enduring relational exchanges (Sashi, 2012), thus favoring the information sharing aspect of SM (Chu and Kim, 2011). Thus, SM improves businesses' effectiveness in promoting their products/services (Goh *et al.*, 2013).

Furthermore, Kim and Ko (2012) have argued that SM enhances value equity, relationship equity and brand equity; in particular, Jin *et al.* (2017) have found that SMU is an effective way to improve a start-up's ability to find new financial resources, and Aggarwal *et al.* (2012) found that SMU advantage is stronger the younger the company is.

Another relevant aspect of the SM literature focuses on the benefits that firms derive from SMU and how these benefits affect business performances. Wang *et al.* (2016) have provided evidence that SM has a positive effect on business-to-business (B2B) communication and business performance, in marketing, innovation and collaborations. Moreover, Wang and Kim (2017) have shown that SMU positively affects firm performance and improves both customer relationship management capabilities and marketing adoption strategies. Rodriguez *et al.* (2012) demonstrated that SM affects B2B sales performance, and Garcia-Morales *et al.* (2018) have suggested that SM affects both technological knowledge competencies and innovation capabilities, both of which can improve firm performance. Dutot and Bergeron (2016) have highlighted the relevance of SM orientation for companies. Parveen *et al.* (2016) and Ainin *et al.* (2015) have found that SM has a strong positive effect on organizations' performance in terms of marketing and customer service cost reduction, improved customer relations and information accessibility (IA). Contrary to these prior studies, Ahmad *et al.* (2019) found that SM had no effect on firms' performances.

In addition, some studies have highlighted that SM enhances firms' financial performances and reinforces their communication with investors and stakeholders. Ainin *et al.* (2015) and Schmiederjans *et al.* (2013) have shown that SM positively affects companies' financial performances. Paniagua and Sapena (2014) have shown that SM positively influences a firm's share value, whereas Yu *et al.* (2013) have highlighted that the effect of different types of SM varies significantly with regard to firm equity value; in fact, SM has a stronger relationship with firm stock performance than it does with conventional media. Luo *et al.* (2013) have shown that SM is a significant leading indicator of firm equity value and can positively affect public investment. Mumi *et al.* (2019) have highlighted that SMU by firms is positively related to their initial public offering value. Several studies have found that SM has a positive impact on the success of campaigns and induces investors to commit financial resources, thus allowing companies to obtain more funding (Vismara, 2016; Block *et al.*, 2018b).

2.2 Social media and entrepreneurship opportunities

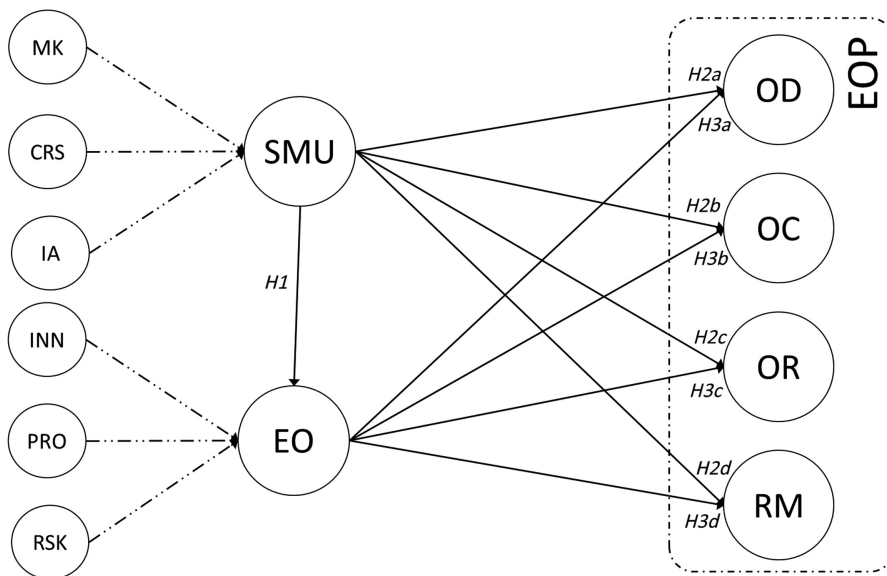
On top of its benefits for companies' marketing, sales and customer service activities and financial performances, entrepreneurs today use SM for various entrepreneurship activities. It is reported that about 82% of the US population (and 54% of the world's population) have at least one SM account (Kemp, 2021; Tankovska, 2021). Among these, most users visit SM once a day, and over 50% of users are visiting multiple SM channels multiple times a day (Wright, 2018). With so many SM user bases and active participants, entrepreneurs can find business opportunities by exposing their products and services to the SM users who can subsequently refer to these products and services and influence others (Wright, 2018). Therefore, it is not surprising that about 40% of small business entrepreneurs spend about 6 h per week in SM for their marketing activities (Morris, 2019). Two sources also reported that a start-up company gained over 70% of their customer traffic from SM (Mahoney, 2021) and 75% of marketers who use SM reported that SM increased their website traffic (Galov, 2021).

Therefore, over the years, several scholars have begun to explore entrepreneurship in the context of the contemporary digital era (Sussan and Acs, 2016), and they have been able to provide evidence that developments in digital technologies are having significant effects on some entrepreneurial activities (Kaplan and Haenlein, 2010; Morris and James, 2017; Nambisan, 2017). Among the digital technologies that are affecting entrepreneurial activities, quite a few studies have explored the role of SM. A recent study by Olanrewaju *et al.* (2020) reviewed 160 studies on this topic and presented an integrated framework on the relationship between SM and entrepreneurship with the antecedents of SMU, the purposes of SMU and outcomes of SMU for entrepreneurial activities. The purposes of SMU for entrepreneurship presented in the study included information search, marketing, business networking and funding activities, and the outcomes of SMU for entrepreneurship included improved business processes, business performance (e.g. cost reduction, financial performance and market share), firm innovation and value creation (Olanrewaju *et al.*, 2020).

However, only a handful of studies either highlighted or investigated SMU for EOP identification. In their conceptual paper, Nambisan and Zahra (2016) highlighted the significance of entrepreneurs' acquisition of demand-side narratives via SM for their EOP, whereas other interview-based empirical studies have provided evidence of entrepreneurs' SM opportunity identification as helping them introduce new products, enter new markets, achieve better customer relations, participate in entrepreneurial events (Olanrewaju *et al.*, 2018), develop business relationships and capitalize on the relationships built via professional SM (e.g. LinkedIn) (Quinton and Wilson, 2016). Finally, Schjoedt (2018) found that SMU has a direct effect on and Park *et al.* (2017) found the moderating role of SMU as existing between entrepreneurial alertness (and entrepreneurs' prior knowledge) and the discovery of EOP. As such, to the best of our knowledge and based on our literature review, little effort has been made to empirically examine the direct role of SMU on EOP identification and EO. After reviewing 160 articles on the relationship between SM and entrepreneurship, Olanrewaju *et al.* (2020) proposed that future research should empirically validate the role of SMU on entrepreneurs' opportunity-related processes. Therefore, in the present study, we have embraced this idea and considered SM in relation to both EO and EOP, and we believe that our theoretical model and empirical evidence will significantly contribute to the literature on the relationship between SMU and entrepreneurship.

3. Research model and hypotheses

This section presents the framework and related hypotheses for how SMU is related to EO and EOP. As shown in Figure 1, four different measures of EOP were used: OD, OC, OR and RM. In addition, both SMU and EO were measured by three well-known sub-dimensions, and the aspects of EOP and the measures of SMU and EO were derived from extant studies, as



Note(s): — — — First order latent variable to second order latent variable links were not tested in the structural model analysis

Figure 1.
Framework

reported in in [Appendix](#). We initially focused on the impact of SMU on EO, and we then focused on the four EOP dimensions. To conclude, we described the connection between EO and the four EOP dimensions.

3.1 Social media use and entrepreneurial orientation

Based on the extant studies, we have defined SMU for entrepreneurship as entrepreneurs' employment of SM for marketing (MK), customer relations and service (CRS) and IA ([Parveen et al., 2016](#)). For EO, we have used the definition proposed by [Parveen et al. \(2016, p. 2212\)](#), which refers to "the methods, practices and decision-making styles managers use to act entrepreneurially" and the three sides of EO proposed by the extant studies ([Covin and Slevin, 1989](#); [Parveen et al., 2016](#); [Sahaym et al., 2019](#)): PRO, RSK and INN.

A number of studies have suggested that the use of SM influences several entrepreneurial aspects of a firm, and some scholars have argued that SMU is essential for developing entrepreneurial capabilities that are useful for increasing the success of business development and enhancing relationships with other stakeholders ([Sashi, 2012](#); [Laroche et al., 2013](#); [Trainor et al., 2014](#); [Camilleri, 2019](#)). [Parveen et al. \(2016\)](#) have shown that using SM for marketing, customer service and access to information could play a key role in affecting the EO of companies, thus disclosing the importance SMU plays in enhancing companies', PRO, RSK and INN. Because of firms' use of SM for new information, marketing activities and customer service and support will increase their capabilities to introduce innovative products/services or processes, we propose that the positive relationship between SMU and EO means that business will behave proactively by monitoring the market and acting audaciously when facing uncertainty ([Lumpkin and Dess, 1996](#); [Dess and Lumpkin, 2005](#); [Chen et al., 2015](#)). According to [Stam and Elfring \(2008, p. 181\)](#) EO is "the simultaneous exhibition of innovativeness, proactiveness and risk-taking". Thus, we propose the following:

H1. Social media use is positively related to entrepreneurial orientation.

3.2 Social media use and entrepreneurial opportunities

SM has evolved over the years, leading firms to use SM in a more specific way that aims to attain several significant effects related to EOP. To provide a more comprehensive concept of the activities related to EOP, we have proposed four dimensions based on extant studies: OD, OC, OR, RM (Stuart and Sorenson, 2005; Park *et al.*, 2017; Olanrewaju *et al.*, 2018). OD refers to entrepreneurs' identification of business opportunities based on their knowledge of the changes in market situations. OC refers to entrepreneurs' perception of "developing and reframing the discovered opportunities with their new ideas acquired from the market" (Park *et al.*, 2017, p. 6). OR has been defined as the process of discussing and recognizing "new products or services, new markets and better relationships with customers" (Olanrewaju *et al.*, 2018, p. 347). Finally, RM has been defined as entrepreneurs' action of gaining access to and assembling various resources, such as financial capital, skilled labor and tacit knowledge, to begin entrepreneurial operations (Stuart and Sorenson, 2005). In sum, determining EOP can be considered the process of (1) discovery of business opportunities; (2) development of the discovered opportunities with market knowledge; (3) recognition of new products and services, new markets, or new ways of dealing with customers; and (4) assembly of various resources to execute the entrepreneurial operation. Using the lens of the relational view (Dyer *et al.*, 2018), and considering the various benefits that SMU can have on organizational learning processes (Kane, 2017; Nisar *et al.*, 2019), we argue that the SMU for MS, CRS and IA will be positively associated with all four dimensions of EOP for the following reasons.

First, in this digital era, SM is breaking down many traditional barriers and dramatically expanding access to information. Entrepreneurs' use of SM helps them gain exposure to market trends and create or acquire new information that is then shared by consumers (Kohli *et al.*, 2015) through the creation and exchange of information that takes place in SM (Schjoedt, 2018). Information, particularly market information, is distributed unevenly throughout SM, thus creating a situation where only a number of entrepreneurs have access to information that may be useful for identifying opportunities (Kirzner, 1997) and effectively creating a heterogeneous set of knowledge resources (Peteraf, 1993). Thus, frequent use of SM helps entrepreneurs discover EOP by increasing the relationships between the involved parties (McKelvie and Wiklund, 2004). Therefore, we hypothesize the following:

H2a. Social media use is positively related to opportunity discovery.

Second, through SMU, entrepreneurs can acquire new knowledge that is useful not only for acquiring further information but also for improving their capability of combining or transforming the information and creating new opportunities (Diga and Kelleher, 2009; Archer-Brown and Kietzmann, 2018). SM has provided new ways for firms to communicate with the world (DiStaso and McCorkindale, 2013), which helps them to create awareness on their products or the firm itself, introduce new products/services and initiate fundraising for development. Furthermore, SMU enhances the awareness of both market changes and customer behavior, thus favoring the creation of opportunities that meet customer demands. Park *et al.* (2017, p. 6) specifically reported that, "social media use is the most effective tool for combining, comparing and evaluating information for EOP". Therefore, SMU can help entrepreneurs combine information from various information sources and create new EOP, and thus, we hypothesize:

H2b. Social media use is positively related to opportunity creation.

SM is also significantly related to entrepreneurial OR. Frequent use of SM favors the creation of new relationships (Kietzmann *et al.*, 2011; Mack *et al.*, 2017), including weak-tie relationships, given the online context of SM. These relationships, even those that are defined as weak ties, help

entrepreneurs acquire a good amount of information, thus increasing their likelihood of recognizing opportunities related to the market, products/services and customer relationship improvement (Granovetter, 1983; McEvily and Zaheer, 1999). In addition, a vast amount of information received through SM helps entrepreneurs to recognize various opportunities for introducing new products/services, entering into new markets, having better customer relationships and participating in entrepreneurial events (Olanrewaju *et al.*, 2018). In this regard, some studies have shown that SMU helps firms to recognize new business partners, create new relationships and develop the resources needed to manage them effectively (Gulati, 2007; Kaplan and Haenlein, 2010; Wang *et al.*, 2016). Therefore, we hypothesize the following:

H2c. Social media use is positively related to opportunity recognition.

Several studies have suggested that SM affects the process of RM (Bhagavatula *et al.*, 2010), particularly because of their relatively low cost for acquiring and managing the resources needed for entrepreneurial activities (He *et al.*, 2017). Several scholars (Archer-Brown and Kietzmann, 2018; Drummond *et al.*, 2018) have found that SMU significantly influences firms' formation and maintenance of B2B relationships and networks, helping them share information and collaborate with other firms and business partners. This provides informational and relational resources for entrepreneurial firms. In this regard, Aggarwal *et al.* (2012) have found that start-ups that leverage social networks increase their access to financial resources and improve their likelihood to attract financial capital, whereas other scholars hold that SM improve their ability to recruit skilled employees and gain access to their tacit knowledge (Stuart and Sorenson, 2005; DiStaso and McCorkindale, 2013). Moreover, better access to financial and human resources via SM can also be evidenced by the fact that a lot of fundraising and recruiting activities have recently been happening online or via SM platforms (e.g. crowdfunding and recruiting through LinkedIn) (Vismara, 2016). In addition to access to resources, SMU plays an important role in supporting RM, because entrepreneurs' access to new knowledge through their connections to tacit information via SM is useful in enhancing these firms' capability for problem solving and managing resources for their entrepreneurial activities (Stuart and Sorenson, 2005; Diga and Kelleher, 2009; Chu and Kim, 2011; Chen *et al.*, 2015). Therefore, we propose the following:

H2d. Social media use is positively related to resource mobilization.

3.3 Entrepreneurial orientation and entrepreneurial opportunities

Many scholars have argued that EO is crucial for entrepreneurial performances and opportunities (Lee *et al.*, 2001; Lumpkin and Dess, 2001; Covin *et al.*, 2006). This section considers for how and why these three dimensions of EO are related to the four aspects of EOP.

First, several studies have found that EO, as a whole (Stam and Elfring, 2008), positively affects OD (Lumpkin and Dress, 1996), which, as discussed, refers to entrepreneurs' identification of business opportunities based on their market knowledge (Park *et al.*, 2017). It has been found that entrepreneurs' EO is positively associated with knowledge acquisition, sharing and application, which leads to OD (Madhoushi *et al.*, 2011). Further, entrepreneurs' EO and prior knowledge is an important precondition for opportunity identification (Chandra *et al.*, 2009). Therefore, we hypothesize the following:

H3a. Entrepreneurial orientation is positively related to opportunity discovery.

Second, prior studies have highlighted the importance of entrepreneurs' PRO, INN and RSK in both the creation and exploitation of new opportunities (Lumpkin and Dess, 1996; Kreiser *et al.*, 2002). Companies characterized by high degrees of these factors are constantly

scanning for new business opportunities and innovating by taking risks (Datta *et al.*, 2015). Therefore, we propose the following:

H3b. Entrepreneurial orientation is positively related to opportunity creation.

Third, it has been found that EO supports entrepreneurial OR (Jantunen *et al.*, 2005), which refers to recognizing “new products or services, new markets and better relationships with customers” (Olanrewaju *et al.*, 2020, p. 347). Firms or entrepreneurs with high EO proactively strive to leverage markets’ innovative solutions (Cooper and Edgett, 2008). A PRO firm actively pursues emerging opportunities through a continuous monitor of trends and market demand forecast (Lumpkin and Dess, 1996; Dess and Lumpkin, 2005; Chen *et al.*, 2015). INN leads firms to create innovative products or processes, whereas a propensity for RSK pushes them to enhance strategic actions in uncertain conditions and seize opportunities without the assurance of success, such as risky investments (Chen *et al.*, 2015). Therefore, we propose the following:

H3c. Entrepreneurial orientation is positively related to opportunity recognition.

Finally, EO, as a whole, improves firms’ capabilities to mobilize resources for EOP with potentially large returns (Chen *et al.*, 2015). Chirico *et al.* (2011) found that properly coordinated interaction among the three dimensions of EO helps orchestrate entrepreneurial resources and improve firm performance in the family business context. Yang *et al.* (2019) have also provided interesting insight on the links between EO and RM; they found significant correlations between EO and firm performance and between EO and knowledge integration, which is an important precondition for RM and resource recombination. Therefore, we propose the following:

H3d. Entrepreneurial orientation is positively related to resource mobilization.

4. Research methods and results

4.1 Sample and data collection

To answer our research questions, we collected survey data from Italian start-ups that were established between 2017 and 2018. Italian start-ups were chosen as our target population because Italy implemented a specific regulation and registry for innovative start-ups (Decree-Law 179/12) and, as a result, has had high growth rates in the number of innovative start-ups (Colombelli, 2016).

In line with prior studies we decided to focus on start-ups because these ventures are less investigated than are well-established or medium-sized companies (e.g. Durkin *et al.*, 2013; McCann and Barlow, 2015; Taiminen and Karjaluoto, 2015; Camilleri, 2019) and they face unique challenges (Mack *et al.*, 2017; Mumi *et al.*, 2019).

The questionnaire of the study was sent to 948 start-ups, and 324 of them were returned for a 34.18% response rate. After discarding 28 responses that were not useable because they were outliers according to the Mahalanobis distance test, we used a final sample of 296 start-ups.

4.2 Measures

To design the questionnaire needed for this research, we adapted validated scales from extant studies (See Appendix). The measures were anchored on five-point Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree). Standard translation and back-translation procedures were followed to create Italian versions, because the original scales were in English. A pilot-test with 37 start-ups was performed to identify and correct potential issues (e.g. comprehension, readability or wording/grammar).

To measure SMU, we adopted a second order latent construct measured by three different aspects: SMU for marketing (MK); SMU for CRS; and SMU for IA from extant studies

(MK and CSR from [Parveen et al., 2016](#), while IA has been adapted by [Park et al., 2017](#)). As a result, a total of 11 items have been used to measure the three first order SMU dimensions (three for MK, three for CRS and five for IA).

EO has been measured using the scale introduced by [Parveen et al. \(2016\)](#) and [Sahaym et al. \(2019\)](#). This scale measured EO as a second order latent represented by three first-order latents: INN, PRO and RSK. A total of eight items have been used to measure them (three for INN, two for PRO and three for RSK).

Finally, based on several extant studies ([Stuart and Sorenson, 2005](#); [Park et al., 2017](#); [Olanrewaju et al., 2018](#)), four different measures for EOP were used: OD, OC, OR and RM. These four EOP constructs consisted of five items for OD, six for OC, four for OR and three for RM. [Table 1](#) shows the constructs, whereas the measures are presented in [Appendix](#).

4.3 Data analysis

To test our hypotheses, we used a PLS-SEM (partial least squares–structural equation modeling) ([Chin, 1998](#); [Hair et al., 2016](#)) using R-Cran (3.6) with the *plspm* and *semr* packages. The PLS-SEM approach, instead of the covariance-based one, is the preferred method when a study is exploratory, the focus is on how the latent variables are related in terms of their predictive powers, and the study does not rely on the distributional assumption of the variables ([Henseler et al., 2009](#)). Moreover, the PLS-SEM approach has been proven to provide results that are at least as good as those of the covariance-based SEM when the sample size is small and there are only a few indicators for each latent variable ([Hair et al., 2019](#)). This approach has been used in different fields related to business and entrepreneurship, such as consumer behavior ([Fornell and Robinson, 1983](#)), e-business ([Chang et al., 2016](#)) and strategic management ([Hair et al., 2012](#)). This approach does not provide for a global fit measure to assess the model validity, so several authors ([Chin, 1998](#); [Henseler et al., 2009](#); [Hair et al., 2016](#); [Ravand and Baghaei, 2016](#)) have defined the data using a two-step approach: (1) quality of the outer (measurement) model and (2) the assessment of the inner (structural) model predictive power.

4.3.1 Measurement model analysis. We analyzed our measurement model based on the four criteria defined by [Hair et al. \(2016\)](#). First, the indicator reliability was checked by verifying that the item-loadings on their latent was higher than 0.6 ([Chin, 1998](#); [Henseler et al., 2009](#)). Second, the construct reliability was checked by verifying that each construct's Dillon-Goldstein's Rho was higher than 0.7 ([Chin, 1998](#)) and that the first eigenvector was higher than 1, whereas the second was lower than 1 ([Sanchez, 2013](#)). Third, the convergent validity was assessed by verifying that the average variance extracted (AVE) of each block was higher than 0.50 ([Hair et al., 2016](#)). Finally, the discriminant validity was assessed by checking

Constructs	Components	References
Social media use (SMU)	Social media for marketing (MK) Social media for customer relations and service (CRS) Social media for information accessibility (IA)	Parveen et al. (2016) , Park et al. (2017)
Entrepreneurial orientation (EO)	Innovativeness (INN) Proactiveness (PRO) Risk taking (RISK)	Parveen et al. (2016) , Sahaym et al. (2019)
Entrepreneurial opportunities (EOPs)	Opportunity discovery (OD) Opportunity creation (OC) Opportunity recognition (OR) Resource mobilization (RM)	Stuart and Sorenson (2005) , Park et al. (2017) , Olanrewaju et al. (2018)

Table 1.
Constructs and their dimensions

Table 2.
Measurement model:
indicator reliability,
construct reliability
and convergent
validity

that each item loading on its latent was higher than the one on the other constructs (Ravand and Baghaei, 2016).

In our case, one item had an item-loading lower than 0.6 (RSK3 – i.e. “to seek the sales growth, our firm is willing to execute some risky projects”). Based on Hair *et al.* (2016) and Sanchez (2013), because our study is mostly an exploratory one, we deleted this item and re-ran the test. As shown in Table 2, the revised model satisfied the four criteria, so we proceeded to the structural model testing with the items in Table 2.

Because we defined our model using the reflective approach for all first-order constructs, we did not have to check for multicollinearity among items for each first-order latent variables, as the loadings were equal scaled covariances (Rigdon, 2012).

4.3.2 Structural model analysis. To test our hypotheses, we looked into the structural path coefficients (β) and *t*-values reported by a bootstrap procedure with 5,000 resamples and the related predicting power of the constructs using the R^2 of the endogenous constructs (Hair *et al.*, 2016; Streukens and Leroi-Werelds, 2016). The related data are reported in Table 3 and illustrated in Figure 2.

Block	Item	Item-loading	DG rho	First eigenvector	Second eigenvector	AVE	R^2
INN	INN1	0.813	0.835	1.890	0.703	0.626	0.00
	INN2	0.753					
	INN3	0.807					
PRO	PRO1	0.873	0.832	1.426	0.574	0.712	0.00
	PRO2	0.813					
RSK	RSK1	0.888	0.891	1.606	0.394	0.803	0.00
	RSK2	0.903					
MK	MK1	0.895	0.905	2.285	0.429	0.762	0.00
	MK2	0.876					
	MK3	0.847					
CRS	CRS1	0.846	0.890	2.192	0.493	0.731	0.00
	CRS2	0.888					
	CRS3	0.829					
IA	IA1	0.720	0.903	3.255	0.765	0.651	0.00
	IA2	0.826					
	IA3	0.871					
	IA4	0.816					
	IA5	0.793					
OD	OD1	0.868	0.929	3.622	0.485	0.724	0.453
	OD2	0.880					
	OD3	0.808					
	OD4	0.874					
	OD5	0.823					
OC	OC1	0.829	0.928	4.113	0.718	0.685	0.411
	OC2	0.844					
	OC3	0.869					
	OC4	0.890					
	OC5	0.859					
	OC6	0.653					
OR	OR1	0.840	0.875	2.547	0.627	0.636	0.510
	OR2	0.862					
	OR3	0.783					
	OR4	0.695					
RM	RM1	0.860	0.862	2.029	0.529	0.675	0.423
	RM2	0.797					
	RM3	0.808					

Note(s): Values were computed after deleting indicators with low loadings

All the structural paths were found to be significant (0.01), whereas the link between SMU and EO was marginally significant at the 0.1 level. Regarding H1, a positive effect of SMU on EO was found, but the data show that the impact was practically negligible ($\beta = 0.006$). For H2 (a–d), it was found that SMU had the strongest relationship with OR (0.631) and the weakest one with OC (0.496), but the differences among the effects do not seem to be significant (i.e. the confidence intervals do overlap). Regarding H3 (a–d), all four paths are significant. The highest load factor of EO on the EOP sub-dimensions was the one regarding OC (0.294), whereas the lowest was the one for RM (0.149); however, even in this case, their confidence intervals overlap, so we cannot assume them to be different. One interesting observation is that, overall, the effects of SMU on the four dimensions of EOP seem to be stronger than the effects of SMU on the four dimensions of EO, which provides an interesting finding. Specifically, SMU plays a stronger role in EOP-related activities than EOs, which will be interpreted in the following section.

Our model seems to have good predictive power. As shown in Table 2, the model explains 45.3, 41.1, 51 and 42.3% of variances of OD, OC, OR and RM, respectively. Because they are all higher than 0.4 and we are carrying on an exploratory study, the interval for good predictive

Hyp	Link	Original	Mean boot	Std. error	<i>t</i> -value	<i>p</i> -value	Support
H1	SMU → EO	0.004	0.006	0.004	1.529	6.32E-02	Yes*
H2a	SMU → OD	0.553	0.552	0.061	9.073	8.16E-20	Yes***
H2b	SMU → OC	0.497	0.496	0.072	6.922	2.51E-12	Yes***
H2c	SMU → OR	0.631	0.631	0.049	12.971	3.63E-38	Yes***
H2d	SMU → RM	0.594	0.595	0.048	12.284	1.71E-34	Yes***
H3a	EO → OD	0.261	0.263	0.066	3.978	3.52E-05	Yes***
H3b	EO → OC	0.290	0.294	0.064	4.611	2.05E-06	Yes***
H3c	EO → OR	0.204	0.207	0.064	3.215	6.56E-04	Yes***
H3d	EO → RM	0.146	0.149	0.057	2.605	4.61E-03	Yes***

Note(s): *P*-value calculated on one-tail. **p*-value < 0.1; ***p*-value < 0.05; ****p*-value < 0.01

Table 3.
Assessment of the structural model and hypothesis testing

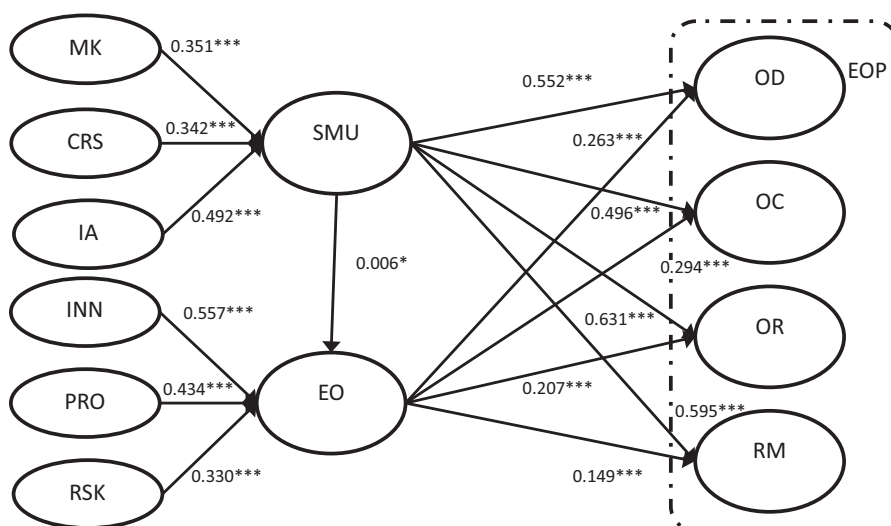


Figure 2.
Final model

power is usually set between at 0.4 and 0.6 (Sanchez, 2013). Further, it has been identified in even lower scores for studies in the social sciences (Falk and Miller, 1992).

5. Discussion

5.1 Discussion of results

This study attempts to advance the understanding of the importance of SMU for start-ups, particularly with regard to how it affects EO and EOP. Despite the increasing popularity of SMU for activities related to EOP, to the best of our knowledge, academic research is still emergent. Only a few studies offer empirical insights about the relationships among SMU, EO and EOP.

First, a marginal relationship between SMU and EO was found, which is not in line with the finding of Parveen *et al.* (2016), who found that SMU and EO are strongly related. A possible explanation for this marginal relationship is that, compared to all types of firms investigated by Parveen *et al.* (2016), our target population shows the tendencies of INN, PRO and RSK, regardless of the level of their SMU for MK, IA and CRS, because that is the nature of start-up companies. In addition, there might be country-specific differences in terms of the relationship between SMU and EO; our study collected data from Italy, whereas Parveen *et al.* (2016) collected data from Malaysia. Moreover, Ma *et al.* (2011) have also provided evidence that cultural differences can cause SMU to have different effects on entrepreneurial activities.

Second, our findings highlight the importance of SMU in EOP-related activities. This demonstrates that start-ups' use of SM for IA, MK and CRS appears to be a highly relevant factor for discovering, creating and recognizing new opportunities and for enhancing the mobilization of resources.

Third, as expected, EO and the four dimensions of EOP are positively associated, which implies that EO, manifested by INN, PRO and RSK will positively affect EOP-related activities.

Finally, one of the most interesting findings was that SMU has a stronger relationship with the four dimensions of EOP than EO has with EOP. This implies that for OD, OC, OR and RM, the active use of SM for MK, CRS management and IA plays a more important role than it does for EO. It can be interpreted that, thanks to the marketing opportunities provided by SM, the bi-directional interaction with customers and the various informational sources (e.g. news feed to the industry association for start-ups), SM plays a more crucial role in EOP-related activities than the start-ups' INN, PRO and RSK tendencies. This has important implications for practices.

5.2 Theoretical contributions

The present study makes the following theoretical contributions. First, by integrating current literature on EOP, this study proposes four dimensions of activities related to this topic. Although the terms used to name three of the four dimensions (e.g. OD, OC and OR) seem to be similar, we have provided different conceptual definitions of them in section 3.2 and empirically validated the distinctions among these four dimensions in section 4.3.1. To the best of our knowledge, this is the first attempt to provide a comprehensive conceptualization of these four aspects of EOP in (1) discovering possible business opportunities (OD), (2) developing the opportunities with entrepreneurs' market knowledge (OC), (3) recognizing new products or services (OR), (4) mobilizing resources for entrepreneurial operations with their discriminant validity tested. Therefore, future studies on EOP could benefit from our study by adopting our conceptualization and empirically validated measures.

Second, SM is at the top of the agenda for many entrepreneurs and at the center of attention for many scholars and practitioners (Kaplan and Haenlein, 2010; Nawi *et al.*, 2017; Obschonka *et al.*, 2019), but we found that relatively few studies have been done to empirically explore the relationship between SM and EOP. Following the call for future research suggested by Olanrewaju *et al.* (2020), this study examines the impact of SMU on EOP and

compares the roles of SMU and EO in affecting the four dimensions of EOP. As suggested in extant studies, EO is an important factor for many aspects of entrepreneurial activities or outcomes, such as funding success (Sahaym *et al.*, 2019), sales and business development (Dutot and Bergeron, 2016) and firm performance (Kreiser and Davis, 2010), so intuitively we may expect that EO is more important for EOP than SMU when it comes to EOP-related activities. However, we found the opposite in that, overall, the dimensions of SMU are more strongly related to EOP than to EO, which highlights the importance of SMU for activities related to EOP. We believe our findings shed light on the role of SM in the field of entrepreneurial research. Based on this study, future research could compare the roles of SMU and EO with other aspects of entrepreneurial activities (e.g. sales, firm performance, funding success) to advance our understanding of the role of SM in the field of entrepreneurship.

Third, this study offers new insight on the minor importance (a significant but negligible effect) of SMU in affecting start-ups' EO, which differs from the results found by Parveen *et al.* (2016); however, both results should contribute to the current debate on the role of SMU in entrepreneurial processes. We believe that our finding on the marginal relationship between SMU and EO reflects the pervasiveness of SM in start-ups. In other words, SM has become so commonly adopted by start-ups (at least in the case of the Italian contexts) that SMU may not matter too much with regard to the start-ups' INN, PRO and RSK. This finding also contributes to the literature on both SM and entrepreneurship as counter-findings to the strong relationship between SMU and EO.

5.3 Practical implications

This study provides several practical implications. First, the integrated four dimensions will provide entrepreneurs with a comprehensive and directly applicable list for the work processes related to EOP, which includes OD, OC, OR and RM.

Second, our findings are related to relatively higher impacts of SMU with regard to all four dimensions of EOP than EO. This implies that having INN, PRO and RSK tendencies without considering the effective use of SM may not be enough for a business to find good EOP and develop them into competitive new products and services. Because SM has become a vital resource for entrepreneurs, especially in the early stages of entrepreneurial processes (Olanrewaju *et al.*, 2020), this finding means that the start-ups that make good use of SM for marketing, customer relationship management and information sourcing will be better off during the opportunity-seeking stage. Therefore, we suggest that entrepreneurs should increase their efforts in using SM because it is a significant source of new EOP. Our results could induce the so-called "startuppers" (Scarmozzino *et al.*, 2017) to practically exploit a set of SM because it could affect OC, OD, OR and RM. Start-ups will benefit from a proactive stance toward SMU, and they can get a sustainable competitive advantage on their competitors that will not exploit SM thanks to an access to a broader, heterogeneous resource endowment (Barney, 1991; Peteraf, 1993). Previous studies show that companies using SM outperform their competitors by lowering costs and improving efficiencies (Harris and Rea, 2009; Parveen *et al.*, 2016). Our study highlights that another key benefit relates to the positive impact that SM has on multiple EOP.

A well-played SMU can have a key role for start-ups' EOP because MK, CRS and IA provide new and valuable sources of knowledge and information, favor the development of new relationships and, increase company public awareness and visibility. Those aspects are of vital importance for new ventures in their early stages. Our findings disclose their relevance in affecting EOP. Interestingly, the start-ups examined in our sample provide practical examples in this regard. For example, it is interesting to note that some of these companies take significant advantages from SM for RM, in particular in terms of recruitment and access to financial capital which is coherent with previous results (Aggarwal *et al.*, 2012;

[Jin et al., 2017](#)). Some start-ups in our sample increased their recruiting capacity and were able to attract high-level profiles. Some others have shown an ability to access new forms of finance leveraging their visibility on SM in new players in entrepreneurial eco-systems ([Block et al., 2018a](#)), such as crowdfunding. Notably, in our sample, it is possible to identify start-ups that launched crowdfunding campaigns – precisely four companies had access to equity-crowdfunding, and two recurred to reward-crowdfunding – and successfully raised funding through these online platforms. This is an intriguing aspect to consider and highlights that SMU may open new, hitherto unexplored frontiers for entrepreneurs in the current challenging scenario. This represents a concrete means to access alternative financing. A growing number of start-ups have become aware of these new players in entrepreneurial finance thanks to SM; at the same time, SM allows companies to increase social interactions and, in turn, to influence their capacity to attract investors and raise financial resources ([Troise et al., 2020](#)). Recent studies show that SM also has a strategic use in the crowdfunding context (e.g. [Datta et al., 2019](#)).

There are also representative examples of the impact of SMU on the other three EOP examined in this study. From a practical standpoint, companies leveraging SM have improved their customer relationships and increased both the likelihood of attending specific entrepreneurial events and entering new markets; these aspects belong to OR. Some start-ups, for example, have had the opportunity through SM to learn about some emerging and little-known markets. Some of these ventures have been able to enter some markets that have not yet been explored for them and which probably would not have been considered but which represented a real opportunity. A concrete example is a start-up that entered the mobile apps market, despite its core business not being tied to this field. Other start-ups had access to dedicated entrepreneurial events such as marketing meetings, innovation fairs and events for the development of the entrepreneurial ecosystem.

Regarding the other two EOP, OD and OC, some companies have, through SMU, discovered new opportunities in their sector, found alternative uses of existing products and have engaged in open innovation contexts or online communities to share ideas and knowledge. Some examples include companies whose products are offered in a different way from what has been provided up to now, or with different though related services. In this sense, SMU has driven these changes thanks to the large amount of information, customer/user feedback and relationships in favor of the companies and their products/services. Many of these start-ups have implemented service innovations. Some companies have begun to use their products for purposes other than what they were originally intended for, whereas other companies have used online open innovation platforms. In some cases, the experience and knowledge of the founders provided direct added value to their companies' products/services and introduced significant novelties for their markets in terms of solutions to problems existing about a specific product/service.

In sum, start-ups using SM may receive more information than their competitors and profitably combine this information ([Park et al., 2017](#)). Therefore, entrepreneurs should pay attention to the opportunity deriving from SMU such as the emergence of new trajectories of markets, the changing of consumers' behaviors and the related opportunity to meet these needs.

Third, SM service providers should provide effective MK, IA and CRS platforms for start-ups. Our study suggests that SM is a more strategic resource for start-ups for EOP than having a good level of EO. Because there are various SM services the new start-ups can choose from, it is important that SM service providers ensure the high performance of their services. Further, government policymakers or industrial associations related to start-ups should encourage the use of SM, stimulate specific actions by the main actors of the entrepreneurial ecosystem and implement new development strategies for start-ups considering the strong roles of SM for EOP processes. Our findings could be an opportunity of reflection for some policymakers and governments to introduce specific

policies to increase start-ups SMU, incentives for companies to invest in these new digital technologies and increase the promotion of SM, or design specific programs to raise awareness. In the digital age it is crucial for companies to proactively leverage new digital technologies and tools (Troise, 2021) and hence embrace the so-called “digital transformation” (Schiuma *et al.*, 2021). This assumes a higher relevance by considering that entrepreneurs operate in dynamic environments and challenging scenarios. Hence, understanding what can influence EOP could be crucial for them and probably guide their efforts or actions.

There are many, different, stakeholders involved in the start-up ecosystem, interested in the effects of SMU on entrepreneurship and, directly involved in the development and growth of start-ups. A variety of new players is also populating the global landscape, such as incubators, accelerators and, crowdfunding platforms (Block *et al.*, 2018a; Bendickson, 2021). Therefore, our findings could represent an insightful means for them to direct their future efforts and increase their potential link with start-ups through SMU.

It is of key importance to consider the multitude of actors of an ecosystem. As argued by Bendickson (2021, p. 537) the impact of research grows “as we can broaden our scope to include more entrepreneurship ecosystem actors”.

5.4 Limitations and future research direction

Our research has some limitations, but these can be used to establish directions for future research. First, we did not consider a specific SM service. Rather we explored the effects of SM as a whole. Thus, a future study could include distinctions between various SM platforms, taking their specificities into account. Second, because we collected our data from Italian start-ups, it might not be possible to generalize our findings outside of this context. Future research could be done in another country or across multiple countries to explore the role of SMU on EO and EOP in different contexts. The third limitation lies in the sample size. Although 296 start-ups represent a satisfactory number in terms of response rate (31% of the start-ups fully completed our questionnaire), in the future it may be possible to enlarge the survey sample size, because the number of start-ups is increasing every year. Finally, a further study could examine the inclusion of other variables related to EOP and SMU.

6. Conclusion

This paper has focused on the effects of SMU on EO and EOP. Clear evidence that SMU plays a key role for start-ups was found, because it has a full and strong impact on EOP. Furthermore, our findings have indicated that the effects of SMU on EOP are stronger than those on EO. Thus, this paper makes important contributions to the literature in terms of framework, context, findings and implications.

This study has proposed a new framework with which to explore the effects of SMU and, in addition to EO, it considers OD, OC, OR and RM to provide a full investigation of EOP. In addition, this study focused on start-ups, an underexplored type of company (Mack *et al.*, 2017; Mumi *et al.*, 2019) operating in a vibrant context (Colombelli, 2016). Moreover, this study extends the current literature by providing insights on the importance of SMU and its positive effects on several types of EOP, whereas the current literature is primarily focused on a single dimension (Park *et al.*, 2017; Olanrewaju *et al.*, 2018; Schjoedt, 2018). Finally, our findings have interesting theoretical and practical implications, as discussed previously, for practitioners, entrepreneurs, managers and policy makers.

Note

1. A comprehensive review of the definitions of digital entrepreneurship is provided by Sahut *et al.* (2019).

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Table A1.
Items

Appendix			
No	Items	Source	
<i>Social media use (SMU)</i>			
<i>SMU for marketing (MK)</i>			
MK1	Advertise and promote product and services	Parveen et al. (2016), Park et al. (2017)	
MK2	Create brand visibility		
MK3	Conduct marketing research		
<i>SMU for customer relations and service (CRS)</i>			
CRS1	Develop customer relations	Parveen et al. (2016), Sahaym et al. (2019)	
CRS2	Communicate with customers		
CRS3	Receive customer feedback on product/services		
<i>SMU for information accessibility (IA)</i>			
IA1	Search for general information		
IA2	Search for competitor information		
IA3	Search for customer information		
IA4	Search for work-related information		
IA5	Search for knowledge from contacts/customers		
<i>Entrepreneurial orientation (EO)</i>			
Our start up . . .			
<i>Innovativeness (INN)</i>			
INN1	Frequently tries out new ideas		
INN2	Is often the first to do marketing for new products and services		
INN3	Encourages and stimulates technological, product/service-market and/or administrative innovation		
<i>Proactiveness (PRO)</i>			
PRO1	Actively takes actions to elicit the responses from the competitors		
PRO2	In dealing with competitors, is quite often the first business to introduce new products/ services, administrative techniques, or operating technologies, etc.		
<i>Risk taking (RSK)</i>			
RSK1	Can accept the uncertainties existing in the projects		
RSK2	Even though the costs for some projects are high, under some conditions, will still launch those projects		
RSK3	To seek the sales growth, is willing to execute some risky projects		

(continued)

(continued)

No	Items	Source
<i>Entrepreneurial opportunities (EOPs)</i>		
	<i>Opportunity discovery (OD)</i>	Olanrewaju <i>et al.</i> (2018), Park <i>et al.</i> (2017), Stuart and Sorenson (2005)
OD1	Discover entrepreneurial opportunities that exist in my industry	
OD2	Discover previously unnoticed entrepreneurial opportunities	
OD3	Excited by the knowledge that there are many unexploited entrepreneurial opportunities	
OD4	Undertake methods and solutions to product problems that build on my experience	
OD5	Search for product information and ideas that took the firm into existing product areas	
	<i>Opportunity creation (OC)</i>	
OC1	Attracted by the idea of breaking away from routine activity	
OC2	Discover new ways of doing things	
OC3	Prefer to find new uses for existing products	
OC4	Be a source of innovative ideas	
OC5	Collect information on totally new products	
OC6	Search for product information involving experimentation and high risk	
	<i>Opportunity recognition (OR)</i>	
OR1	Introduce new products/services	
OR2	Enter new markets	
OR3	Better customer relations	
OR4	Participating in entrepreneurial events	
	<i>Resource mobilization (RM)</i>	
RM1	Access to financial capital	
RM2	Recruiting skilled labor	
RM3	Access to tacit knowledge	

Table A1.